

What is claimed is:

1. A disc brake assembly comprising:
  - an anchor bracket adapted to be secured to a vehicle component;
  - a brake caliper adapted to be secured to said anchor bracket;
  - 5 an inboard friction pad and an outboard friction pad carried by said disc brake assembly and adapted to be disposed on opposite axial sides of an associated brake rotor;
  - actuation means for selectively moving said inboard and outboard friction pads into frictional engagement with the rotor; and
  - 10 a pad spring carried by at least one end of one of said friction pads for moving said friction pads from engagement with the rotor when said actuation means is released;
  - wherein said pad spring includes a first portion for applying a first retraction force and a second portion for applying a second retraction force
  - 15 which is different from said first retraction force.
2. The disc brake assembly according to Claim 1, wherein said pad spring is formed from a flat strip of metal material.
- 20 3. The disc brake assembly according to Claim 1, wherein said pad spring permanently yields as the lining of the friction pad wears.
4. The disc brake assembly according to Claim 1, wherein said pad spring permanently yields and applies a corresponding decreasing rate of
- 25 retraction force as the lining of the friction pad wears.
5. The disc brake assembly according to Claim 1, wherein said pad spring is carried by said friction pad in a symmetrical manner.

6. The disc brake assembly according to Claim 1, wherein said pad spring is carried by said friction pad in an asymmetrical manner.

7. The disc brake assembly according to Claim 1, wherein said pad spring is carried by said friction pad with a portion of said spring spaced apart at an angle from contact an adjacent surface of said friction pad in a normal position when the brake is not actuated.

8. A disc brake assembly comprising:  
an anchor bracket adapted to be secured to a vehicle component;  
a brake caliper adapted to be secured to said anchor bracket;  
an inboard friction pad and an outboard friction pad carried by said disc brake assembly and adapted to be disposed on opposite axial sides of an associated brake rotor;  
actuation means for selectively moving said inboard and outboard friction pads into frictional engagement with the rotor; and  
a pad spring carried by at least one end of one of said friction pads for moving said friction pads from engagement with the rotor when said actuation means is released;  
wherein said pad spring permanently yields and applies a corresponding force from a geometrically decreasing spring rate as said friction pad wears.

9. The disc brake assembly according to Claim 8, wherein said pad spring is carried by said friction pad in a symmetrical manner.

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10. The disc brake assembly according to Claim 8, wherein said pad spring is carried by said friction pad in an asymmetrical manner.

11. The disc brake assembly according to Claim 8, wherein said pad spring is carried by said friction pad with a portion of said spring spaced apart at an angle from contact an adjacent surface of said friction pad in a normal position when the brake is not actuated.

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12. The disc brake assembly according to Claim 8, wherein said pad spring is formed from a flat strip of metal material.

13. A disc brake assembly comprising:  
10 an anchor bracket adapted to be secured to a vehicle component;  
a brake caliper adapted to be secured to said anchor bracket;  
an inboard friction pad and an outboard friction pad carried by said disc brake assembly and adapted to be disposed on opposite axial sides of an associated brake rotor;  
15 actuation means for selectively moving said inboard and outboard friction pads into frictional engagement with the rotor; and  
a pad spring carried by at least one end of one of said friction pads;  
wherein said pad spring is carried by said friction pad with a portion of said pad spring spaced apart and at an angle from contact with an adjacent  
20 surface of said friction pad in a normal position when the brake is not actuated.

14. The disc brake assembly according to Claim 13, wherein said pad spring is formed from a flat strip of metal material.

25 15. The disc brake assembly according to Claim 13, wherein said pad spring is carried by said friction pad in a symmetrical manner.

16. The disc brake assembly according to Claim 13, wherein said pad spring is carried by said friction pad in an asymmetrical manner.

17. A brake shoe assembly adapted for use in a disc brake assembly  
5 comprising:  
a backing plate having a pair of opposed ends;  
a friction pad secured to said backing plate; and  
a pad spring carried by at least one end of said backing plate for moving  
said friction pad from engagement with a brake rotor of the disc brake assembly  
10 when the brake is released;  
wherein said pad spring includes a first portion for applying a first  
retraction force and a second portion for applying a second retraction force  
which is different from said first retraction force.

18. The brake shoe assembly according to Claim 17, wherein said pad  
15 spring is formed from a flat strip of metal material.

19. The brake shoe assembly according to Claim 17, wherein said pad  
spring permanently yields as the lining of the friction pad wears.  
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20. The brake shoe assembly according to Claim 17, wherein said pad  
spring permanently yields and applies a corresponding decreasing rate of  
retraction force as the lining of the friction pad wears.

21. The brake shoe assembly according to Claim 17, wherein said pad  
25 spring is carried by said friction pad in a symmetrical manner.

22. The brake shoe assembly according to Claim 17, wherein said pad spring is carried by said friction pad in an asymmetrical manner.

23. The brake shoe assembly according to Claim 17, wherein said pad  
5 spring is carried by said friction pad with a portion of said spring spaced apart at an angle from contact an adjacent surface of said friction pad in a normal position when the brake is not actuated.

24. A brake shoe assembly adapted for use in a disc brake assembly  
10 comprising:  
a backing plate having a pair of opposed ends;  
a friction pad secured to said backing plate; and  
a pad spring carried by at least one end of said backing plate for moving  
said friction pad from engagement with a brake rotor of the disc brake assembly  
15 when the brake is released;  
wherein said pad spring permanently yields and applies a corresponding force from a geometrically decreasing spring rate as said friction pad wears.

25. The brake shoe assembly according to Claim 24, wherein said pad  
20 spring is carried by said friction pad in a symmetrical manner.

26. The brake shoe assembly according to Claim 24, wherein said pad spring is carried by said friction pad in an asymmetrical manner.

25 27. The brake shoe assembly according to Claim 24, wherein said pad spring is carried by said friction pad with a portion of said spring spaced apart at an angle from contact an adjacent surface of said friction pad in a normal position when the brake is not actuated.

28. The brake shoe assembly according to Claim 24, wherein said pad spring is formed from a flat strip of metal material.

5           29. A brake shoe assembly adapted for use in a disc brake assembly comprising:

          a backing plate having a pair of opposed ends;

          a friction pad secured to said backing plate; and

          a pad spring carried by at least one end of said backing plate;

10           wherein said pad spring is carried by said backing plate with a portion of said pad spring spaced apart and at an angle from contact with an adjacent surface of said backing plate in a normal position when the disc brake assembly is not actuated.

15           30. The brake shoe assembly according to Claim 29, wherein said pad spring is formed from a flat strip of metal material.

          31. The brake shoe assembly according to Claim 29, wherein said pad spring is carried by said friction pad in a symmetrical manner.

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          32. The brake shoe assembly according to Claim 29, wherein said pad spring is carried by said friction pad in an asymmetrical manner.

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